
PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Enhance Umatilla River Basin Anadromous Fish Habitat

BPA project number: 8710001
Contract renewal date (mm/yyyy): 2/2000 ☐ Multiple actions?

Business name of agency, institution or organization requesting funding
Confederated Tribes of the Umatilla Indian Reservation

Business acronym (if appropriate) CTUIR

Proposal contact person or principal investigator:

Name	Gary James
Mailing Address	P.O. Box 638
City, ST Zip	Pendleton, OR 97801
Phone	(541) 276-4109
Fax	(541) 276-4348
Email address	jaburke@ucinet.com

NPPC Program Measure Number(s) which this project addresses
7.6, 7.7 and 7.8

FWS/NMFS Biological Opinion Number(s) which this project addresses
Not Applicable

Other planning document references

Wy-Kan-Ush-Mi-Wa-Kish-Wit - Volume 1, pages 5b-12 through 5B-14 and Volume 2, page 44 (CRITFC, 1995).

Umatilla Drainage Fish Habitat Improvement Implementation Plan, pages 6 - 9 and APPENDIX B (ODFW and Others, 1987).

The Umatilla River Subbasin Salmon and Steelhead Production Plan, pages 27 - 28 (NPPC, 1990).

Umatilla Basin Natural Production Monitoring and Evaluation Annual Progress Reports, appendices (BPA, 1992 - 1997).

Short description

Increase natural production potential of summer steelhead, chinook salmon and coho salmon in the Umatilla River Basin.

Target species

The following anadromous species: summer steelhead, fall chinook salmon, spring chinook salmon and coho salmon; resident fish (including bull trout) and wildlife also benefit from habitat enhancements implemented under this project.

Section 2. Sorting and evaluation

Subbasin

Umatilla

Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
<input checked="" type="checkbox"/> Anadromous fish <input type="checkbox"/> Resident fish <input type="checkbox"/> Wildlife	<input type="checkbox"/> Multi-year (milestone-based evaluation) <input checked="" type="checkbox"/> Watershed project evaluation	<input type="checkbox"/> Watershed councils/model watersheds <input type="checkbox"/> Information dissemination <input checked="" type="checkbox"/> Operation & maintenance <input type="checkbox"/> New construction <input type="checkbox"/> Research & monitoring <input checked="" type="checkbox"/> Implementation & management <input type="checkbox"/> Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
8710002	Umatilla Basin Habitat Improvement	Integrate basin-wide approach to identify and remedy habitat limiting factors. While both projects continue to operate independently, they function as part of an interdependent program (based on 1987 Umatilla Drainage Habitat Implementation Plan).
9000501	Umatilla Basin Natural Production Monitoring and Evaluation	Enhance habitat based upon habitat limiting factors identified from physical surveys, biological surveys, spawning surveys and water quality data.
8343500	Umatilla Hatchery Satellite Facilities Operation and Maintenance	Increase survival and out-migration potential of released juvenile fish by expanding available rearing habitat.
8802200	Umatilla River Fish Passage Operations	Improve habitat conditions to increase spawning potential of trapped and hauled adult fish.
9604601	Walla Walla Basin Habitat Enhancement	Share personnel, vehicles and equipment.
9608300	Grande Ronde Basin Habitat Enhancement	Share personnel, vehicles and equipment.

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
1998	Have secured 35 riparian easements on private properties since 1988.	Ongoing, as indicated in the NPPC FWP, "implement riparian easements of sufficient width to improve and maintain salmon and steelhead production in privately owned riparian areas and adjacent lands".
1998	Have enhanced 13.8 stream miles of habitat on private properties since 1988.	Ongoing, as indicated in the NPPC FWP, "protection and improvement of habitat on private lands is an essential component of comprehensive watershed management".
1998	Have constructed approximately 20 miles of riparian corridor fencing, seeded 5,600 lbs. of native grasses, planted 40,250 native trees, placed 348 pieces of large woody debris, and constructed 59 tree bank revetments, 95 sediment retention	Ongoing, these enhancements are consistent with NPPC FWP Measure 7.6D Habitat Objectives to reduce sediments, stabilize banks, improve water quality, increase large woody debris and retain riparian vegetation.
	structures, 11 wiers and 39 wing deflectors since 1988.	Project monitoring has documented upward trends.
1998	Have provided numerous oral presentations, tours, workshops, educational opportunities, etc. to promote habitat restoration and watershed management since 1988.	Ongoing, not a biological objective, but educational efforts are consistent with objectives under NPPC FWP Measure 7.6C Coordinated Habitat Planning.

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Implement and maintain habitat enhancement projects throughout the Umatilla River Basin.	a	Pre-construction preparation:
			Sub-task a.1. Assess annual maintenance needs in existing project areas.
			Sub-task a.2. Prepare grant proposals and cost-share agreements.
			Sub-task a.3. Develop conservation easements for proposed habitat enhancements on private lands.
			Sub-task a.4. Apply for and obtain necessary fill and removal permits.
			Sub-task a.5. Conduct cultural/archeological surveys in proposed project areas (Section 106 Compliance).
			Sub-task a.6. Complete project(s) design(s) and layout(s).
			Sub-task a.7. Solicit bids and award sub-contracts for proposed enhancements.
		b	Implement new and maintain existing habitat enhancements.
			Sub-task b.1. Place large woody debris and maintain bank stabilization structures.

			Sub-task b.2. Construct and maintain riparian corridor fencing.
			Sub-task b.3. Plant native grasses, shrubs and trees in project areas.
			Sub-task b.4. Control noxious weeds in project areas.
		c	Conduct post-construction final reviews to insure sub-contract conformity.
2	Collect pre and post-project data to identify habitat limiting factors and to quantify short and long-term effects of habitat enhancements in the Umatilla River Basin.	a	Conduct habitat surveys in proposed habitat enhancement areas.
		b	Conduct biological inventories within proposed and existing habitat enhancement areas to determine anadromous fish utilization.
		c	Establish and continue photo point and stream channel transect monitoring to measure changes in channel morphology and vegetative response.
		d	Sample aquatic macroinvertebrate populations to document macroinvertebrate response to habitat enhancements.
		e	Deploy thermographs and obtain stream temperature data during June through September.
		f	Monitor suspended sediments year-round at established sites in the upper basin.
3	Continue watershed planning, scoping and education processes by identifying problems and developing creative solutions to land use problems impacting fisheries habitat in the Umatilla River Basin.	a	Utilize Washington State University's Umatilla River Basin Watershed Assessment to coordinate and prioritize basin-wide habitat restoration projects.
		b	Continue outreach efforts at the local community level to assist in identification of habitat impacts and development of long-term solutions.
		c	Produce educational materials and distribute information to the public.

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	2/2000	1/2001	salmonid and macroinvertebrate utilization in enhancement areas	increased annual utilization trends	80%
1	2/2000	1/2001	native plant species abundance and survival	increased annual native vegetation recovery trends	
1	2/2000	1/2001	streambank stability	increased annual	

				streambank stabilization trends	
1	2/2000	1/2001	solar input into stream channel	decreased annual riparian solar input trends	
1	2/2000	1/2001	stream channel morphology	decreased annual channel width to depth ratio trends	
2	2/2000	1/2001		N/A	8%
3	2/2000	1/2001		N/A	12.00%
				Total	100.00%

Schedule constraints

Possible constraints may include delays in securing: (1) conservation easements due to longer than anticipated negotiations with landowners, and (2) fill and removal permits due to a slow response time from regulatory agencies.

Completion date

Not Applicable - an on-going project

Section 5. Budget

FY99 project budget (BPA obligated): \$270,000

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel		%31	96,000
Fringe benefits		%9	26,880
Supplies, materials, non-expendable property		%18	55,000
Operations & maintenance	Approximately 40% of combined funds as indicated in right column comprise needed O&M dollars.	%0	
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		%0	
NEPA costs		%0	
Construction-related support		%0	
PIT tags	# of tags:	%0	
Travel		%6	16976
Indirect costs		%22	66,251
Subcontractor	Heavy equipment rental, fence construction, noxious weed control, and tree planting	%14	43,893
Subcontractor		%0	
Other		%0	
TOTAL BPA FY2000 BUDGET REQUEST			\$305,000

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount (\$)
CTUIR	Partial salary for Fisheries Project Leader	%6	24,651
Bureau of Indian Affairs (BIA)	Vehicle lease and insurance	%1	4,000
BIA	Noxious weed control contracts on Indian allotments within and adjacent to habitat projects	%4	15,000
BIA	Training and Per Diem	%0	600
Environmental Protection Agency (EPA)	Salaries, fringe benefits and indirect for Hydrologist and Resource Conservationist	%3	10,291
EPA	Construction materials and subcontract funds for on-the-ground project implementation	%9	35,000
Umatilla County Road Department	Equipment operator and excavator to correct passage problems at three county road bridges	%2	8,400
Total project cost (including BPA portion)			\$402,942

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	\$315,000	\$325,000	\$335,000	345000

Section 6. References

Watershed?	Reference
<input type="checkbox"/>	Adelman, Bob. January 15, 1997. Personal comment stated in a phone conversation.
<input type="checkbox"/>	Columbia River Inter-Tribal Fish Commission. 1995. Wy-Kan-Ush-Mi-Wa-Kish-Wit Spirit of the Salmon. Columbia River Anadromous Fish Plan of the Nez Perce, Umatilla, Warm Springs and Yakima Tribes.
<input type="checkbox"/>	Confederated Tribes of the Umatilla Indian Reservation and Bureau of Indian Affairs - Umatilla Agency. 1997. Range Management Plan Umatilla Indian Reservation - Range Land Health Standards and Guidelines. Mission, Oregon.
<input type="checkbox"/>	Confederated Tribes of the Umatilla Indian Reservation. 1992-1997. Umatilla Basin Natural Production Monitoring and Evaluation Annual Progress Reports. Physical Habitat Survey Data, Biological Survey Data, Passage Data in Appendices. BPA, Portland, OR.
<input type="checkbox"/>	Confederated Tribes of the Umatilla Indian Reservation. 1997. Umatilla Basin Natural Production Monitoring and Evaluation Project Spawning Survey Data. Mission, Oregon.
<input type="checkbox"/>	Confederated Tribes of the Umatilla Indian Reservation. 1989-1997. Umatilla River Basin Anadromous Fish Habitat Enhancement Project Annual Reports. BPA, Portland, Oregon.
<input type="checkbox"/>	Kelly, Christine. June 28, 1997. Personal comment stated in a phone conversation.
<input checked="" type="checkbox"/>	Northwest Power Planning Council. 1990. Columbia Basin System Planning - Salmon and Steelhead Production Plan for the Umatilla Basin. Northwest Power Planning Council, Portland, Oregon.
<input type="checkbox"/>	Oregon Department of Environmental Quality. 1996. Department of Environmental Quality's 1994/1996 303(d) List of Water Quality Limited Waterbodies & Oregon's Criteria Used for Listing Waterbodies.
<input checked="" type="checkbox"/>	Oregon Department of Fish & Wildlife, USDA Forest Service and CTUIR. 1988. Umatilla

	Drainage Fish Habitat Improvement Implementation Plan.
<input type="checkbox"/>	Reeve, Randy. September-October 1988. A Low Maintenance Fence "from" Groundwork-Wasco County Soil & Water Conservation District Newsletter.
<input type="checkbox"/>	U.S. Environmental Protection Agency. 1997. TMDL Sediment Subcommittee Spring 1997 Selected Parameters.
<input type="checkbox"/>	USDA, Forest Service - Intermountain Region Wildlife Management. 1985. Aquatic Ecosystem Inventory-Macroinvertebrate Analysis, Chapter 5 Aquatic Macroinvertebrate Surveys "from" Fisheries Habitat Surveys Handbook. R-4 FSH 2609.23. Provo, Utah.
<input type="checkbox"/>	

PART II - NARRATIVE

Section 7. Abstract

Funds are being sought to improve anadromous salmonid habitat on private lands, provide educational outreach opportunities, maintain previously implemented habitat enhancement projects, and monitor habitat conditions in the Umatilla River Basin.

The project goal is to protect and enhance habitat for improved natural production of anadromous fish in the Umatilla River Basin. Objectives include public scoping and education, implementation and maintenance of habitat enhancement projects, and monitoring habitat conditions.

This project is consistent with NPPC Measure Numbers 7.6, 7.7 and 7.8. The project entails coordinated, cooperative efforts to protect and improve anadromous fisheries habitat on a comprehensive watershed management basis. Improved habitat quality will provide increased juvenile and adult freshwater survival and result in greater offspring out-migration.

An updated watershed analysis is currently being developed in cooperation with Washington State University to identify habitat limiting factors and to assist the project with sub-watershed prioritization of habitat needs. This document and working databases will be completed and available for project guidance in FY 2000. The CTUIR will continue to prioritize and utilize passive, natural recovery processes when possible. Active, bio-engineering approaches will be reserved for areas unable to significantly recover in a timely or natural manner.

Short-term (three to five years) project effects shall include native plant community recovery, increased stream bank stability, and increased stream channel shading. Long-term (25 to 100 years) project effects shall include changes in hydrological features, vegetation succession, channel narrowing, cooler stream temperatures, reduced sediment input, increased wood recruitment, greater riparian and in-stream habitat diversity, and increased bird, mammal, macroinvertebrate and salmonid populations.

Pre and post-project monitoring shall include: (1) stream channel transect measurements, (2) summer (with foliage) and fall (without foliage) photo documentation, (3) modified Hankin and Reeves physical surveys, (4) summer and fall macroinvertebrate sampling, (5) biological sampling, (6) stream temperature monitoring, and (7) suspended sediment monitoring. Project success will be evaluated by changes in: (1) channel width to depth ratios, (2) vegetative response, (3) riparian solar input, (4) pool to riffle ratios, (5) macroinvertebrate and salmonid abundance and diversity, (6) stream temperatures and (7) sediment loads.

Section 8. Project description

a. Technical and/or scientific background

The Umatilla River Basin Anadromous Fish Habitat Enhancement Project is a comprehensive project partially funded under the Northwest Power Planning Council's Columbia River Basin Fish and Wildlife Program (Sections 7.6 – 7.8) as partial mitigation for hydroelectric dam construction and subsequent losses of anadromous fish throughout the Columbia River Basin. The goal of the project is to enhance natural production of existing summer steelhead and re-introduced chinook and coho salmon in the Umatilla River Basin. Project functions include identification of watershed impacts, creation of solutions to land use problems, prioritization and implementation of habitat improvements, providing and participating in educational outreach activities, and monitoring short and long-term effects of habitat enhancements. An operations and maintenance component is also included under this project.

The Umatilla Drainage Fish Habitat Improvement Implementation Plan (ODFW, USFS and CTUIR, 1988) served as the initial guiding document for BPA funded habitat enhancement projects in the Umatilla River Basin. This document identified deficient anadromous fish habitat in the upper basin, recommended remedial measures, and provided an implementation schedule. The plan directed CTUIR to treat 18 stream miles of habitat on private lands within reservation boundaries. The CTUIR have addressed the 18 miles of identified habitat deficient stream reaches through a combination of enhancement efforts (8 miles), recent property acquisitions (7 miles), and through implementation of the CTUIR and BIA Range Management Plan (CTUIR and BIA, 1997) (3 miles). The Umatilla National Forest and Oregon Department of Fish and Wildlife (ODFW) have addressed other impacted stream reaches identified in the plan.

Since 1993, the project has shifted emphasis to a comprehensive watershed approach and expanded projects off the Reservation to include an additional 5.5 miles of stream habitat enhancement. A total of 35 riparian easements have been secured for recovery of 13.8 miles of tributary and upper mainstem habitat since project inception. Current project areas are located on Wildhorse Creek, Greasewood Creek, Spring Hollow Creek, Mission Creek, Buckaroo Creek, Meacham Creek, Boston Canyon Creek and the Upper Umatilla River. These enhancements have been implemented with a combination of BPA, BIA, EPA and U.S. Fish & Wildlife Service (USFWS) funding.

In the past, The Umatilla Drainage Fish Habitat Improvement Implementation Plan was used to guide anadromous fisheries habitat enhancement efforts in the basin. This 1988 document was designed to be a "five year" implementation plan, many of the recommended recovery methods are no longer biologically valid (in-stream hard structures, rip-rapping, etc.), all areas recommended for enhancement have been addressed, and the plan's abstract states, "additional habitat improvement needs to be implemented beyond 1992 will be consistent with subbasin plans of the Northwest Power Planning Council and addressed in an updated version of this plan". Currently, Washington State University (WSU) is developing an updated Umatilla River Basin Watershed Assessment to assist the project with sub-watershed prioritization of habitat needs. This document will identify historical and current watershed conditions, determine habitat limiting factors, and include working, upgradable data bases. This information will be completed and available for project guidance in FY 2000.

Proposed FY 2000 project sites will include upper mainstem and tributary habitat upstream of Umatilla River Mile (RM) 55. The Natural Resource Conservation Service (NRCS) have indicated that poor cropland tillage practices are resulting in up to 150 tons of annual top soil erosion in upper watershed areas (Bob Adelman, personal communication). The Umatilla Basin Total Maximum Daily Load (TMDL) Technical Group have indicated that total dissolved solids and turbidity levels are on a magnitude of 50 to 60 times higher in the Wildhorse Creek Watershed than elsewhere in the basin (Christine Kelly, personal communication). Data collected at the mouth of Wildhorse Creek during an April 23, 1997 storm event documented total dissolved solid loads at 5500 mg/l and turbidity levels at 500 NTU (EPA, 1997). The CTUIR Umatilla Basin Natural Production Project determined "all" 1997 fall chinook and coho salmon redds in the lower 55 miles of the Umatilla River (downstream of the confluence with the mouth of Wildhorse Creek) were lost due to high sediment levels (CTUIR, 1997).

Upper basin tributaries, including Buckaroo Creek, Squaw Creek, Meacham Creek, and Wildhorse Creek, have been listed as temperature limited basins on the Oregon Department of Environmental Quality's (ODEQ) 303(d) List of Water Quality Limited Waterbodies (ODEQ, 1996). Stream temperatures in these subwatersheds exceed state water quality standards and often exceed 80 degrees fahrenheit for several hour

periods during summer months in the Buckaroo Creek, Squaw Creek and Wildhorse Creek drainages (CTUIR Umatilla River Basin Anadromous Fish Habitat Enhancement Project Annual Reports, 1989 through 1997). Habitat surveys conducted in Buckaroo Creek, Squaw Creek and Wildhorse Creek indicate that these systems exhibit low in-stream habitat diversity, inadequate pool habitat, insufficient riparian canopy cover and intermittent stream flows during summer months (CTUIR 1992 and 1993 Umatilla Basin Natural Production Monitoring and Evaluation Annual Progress Reports and CTUIR 1997 Umatilla River Basin Anadromous Fish Habitat Enhancement Project Annual Report). Biological and spawning surveys conducted by the CTUIR Umatilla Basin Natural Production Monitoring and Evaluation Staff (CTUIR, 1997) indicate that these drainages support anadromous fish populations at various life stages. The Buckaroo Creek, Squaw Creek and Meacham Creek watersheds contain continuous blocks of critical anadromous fisheries habitat (ODFW, USFS and CTUIR, 1988).

FY 2000 projects will be located upstream of Umatilla RM 55 and include enhancements in Wildhorse Creek, Mission Creek, Squaw Creek, Buckaroo Creek, Meacham Creek and the upper Umatilla River. Specific locations will be based upon areas identified as high priority in the Umatilla River Basin Watershed Assessment (currently under development), landowner cooperation, and possession of funds to seek and secure landowner agreements. Proposed enhancements shall include construction of 3 to 5 stream miles of riparian corridor fencing and vegetation of 7 to 8 miles of stream corridor.

b. Rationale and significance to Regional Programs

The project is consistent with the NPPC's Columbia River Basin Fish and Wildlife Program, Sections 7.6 – 7.8. This habitat project is one element in the comprehensive Umatilla Program, which also includes artificial production, adult and juvenile passage improvements (ladders, screens, and trap and haul), in-stream flow enhancement, and monitoring and evaluation.

This project will further the goals set forth in the 1994 FWP by: (1) protecting existing high quality habitat through local coordination and cooperation, (2) prioritizing restoration projects through the use of watershed assessment, (3) promoting watershed and resource management and protection through public outreach and educational efforts, (4) prioritizing actions that maximize the desired result per dollar spent, (5) coordinating data collection, analysis and reporting, and adaptive management to monitor progress in achieving compliance with the Council's habitat objectives, (6) managing riparian and floodplain areas to promote the protection and re-establishment of natural ecological functions and, thereby, protect and improve salmon and steelhead habitat, (7) developing and maintaining local and regional watershed approaches on the Reservation and Tribal ceded lands, (8) encouraging land management activities that maintain the quantity and quality of existing salmon and steelhead habitat, (9) initiating recovery actions where water quality or land management objectives for fish habitat are not being met, (10) improving livestock management by developing, updating and implementing livestock management plans, (11) implementing riparian easements of sufficient width to improve and maintain salmon and steelhead production in privately owned riparian areas and adjacent lands, and (12) seeking cost-share and encouraging the investment of volunteers.

This project is an in-kind, in-place project.

c. Relationships to other projects

Several critical components are being addressed to assist with accomplishing self-sustaining anadromous fisheries in the Umatilla River Basin. Artificial production, removal of passage impediments, flow enhancement and transport of fish continue to complement habitat enhancement efforts. Specific examples funded under the FWP have included construction of new fish ladders and screens at Feed Canal Dam, Stanfield Dam and Westland Dam, maintenance of in-stream flows through water exchange (implementation of phases 1 and 2 of the Umatilla Basin Project), recent construction of three fish acclimation facilities, and development of an updated Umatilla River Basin Watershed Assessment (available in FY 2000). On-going complementary BPA funded projects include the Umatilla Hatchery Satellite Facilities Operation and Maintenance Project (#83-435-00) and the Umatilla River Fish Passage

Operations Project (#88-022-00). The project also shares personnel, vehicles and field equipment with the BPA funded Walla Walla Basin Habitat Enhancement Project (#96-046-01) and the Grande Ronde Basin Habitat Enhancement Project (#96-083-00).

This project is relevant and complementary to the projects indicated above in that it addresses critical protection and restoration of habitat necessary for survival of salmonid fishes in the basin. In the absence of habitat enhancement, all other components will fail. On a broader scale, elevation of Umatilla River Basin juvenile outmigration numbers through habitat improvements will assist with accomplishing Columbia Basin adult escapement goals. Anadromous fish throughout the Columbia Basin are dependent on availability of quality habitat during all phases of their life cycles. Habitat issues in Columbia Basin subwatersheds must be addressed, so that adequate rearing and spawning habitat is available for continued natural propagation.

The project requires interaction with local, state, federal and Tribal interests. In-stream enhancements require fill and removal permits from the Oregon Division of State Lands (ODSL), U.S. Army Corps of Engineers (COE) and CTUIR Water Resources Program. This project often coordinates with NRCS and the Umatilla County Farm Service Agency (FSA) to seek local support and assistance in developing cooperative, remedial land use measures.

d. Project history (for ongoing projects)

Project Number and Title:

87-100-01 – Umatilla River Basin Anadromous Fish Habitat Enhancement Project (number and title have not changed since project inception)

Project Reports and Technical Papers:

Since 1989, annual reports have been provided to BPA. These reports document habitat limiting factors, habitat enhancements, pre and post-project monitoring, public outreach efforts and public input. Quarterly reports, providing continuous updates on completed and proposed project activities, have also been submitted to BPA since 1989.

Major Results Achieved:

<u>Implementation:</u>	<u>Number:</u>
-Riparian easements secured	35
-Stream miles enhanced	13.8
-Riparian enclosure fencing (miles)	20
-Native grasses seeded (lbs.)	5,600
-Native trees/shrubs planted	40,250
-Trees/root wads placed in-stream	348
-Tree bank revetments	59
-Sediment retention structures	95
-Log and boulder weirs	11
-Log and boulder deflectors	39
-Cultural resource inventories	8
<u>Monitoring:</u>	<u>Years:</u>
-Photo point data (80 sites)	1988-1998
-Stream channel cross-section data (89 sites)	1988-1998
-Macroinvertebrate data (3 reports; 54 samples)	1996-1998
-Stream temperature data (21 sites)	1989-1998
-Suspended sediment data (3 sites)	1989-1998

Public Outreach:
-Bio-engineering workshops (2)
-Public scoping meetings (5)
-Presentations, tours, etc.

Number:
335 participants
125 participants
numerous

Adaptive Management Implications:

Through trial and error, the project has moved away from traditional in-channel modifications and discovered that passive, natural recovery processes in conjunction with intensive native plant revegetation efforts have a much higher success rate.

Years Underway:

Thirteen years (1987 – 1999)

Past Costs:

Annual project costs have ranged from \$96,494.00 (1987) to \$270,000 (1999).
The project costs have averaged \$206,640.00 per year over the project's thirteen year history.

e. Proposal objectives

Objective 1. Implement and maintain habitat enhancement projects throughout the Umatilla River Basin.

Products derived from Objective 1.:

- (1) Fifteen year riparian easements - approximately three to four agreements will be secured on private lands located in the upper basin (upstream of RM 55).
- (2) Cost-share funds – approximately \$97,942.00 in cost-share has been secured (see Section 5. Budget for more detail); grant applications (Governor's Watershed Enhancement Board [GWEB], USFWS Partners' for Wildlife, etc.) will also be completed to seek additional cost-share opportunities.
- (3) In-stream fill and removal permits - will be renewed in existing enhancement areas if high flows result in structure damage or applied for in proposed enhancement areas if in-stream activities are incorporated into project design(s).
- (4) Pedestrian surveys and reports - will be completed for proposed construction projects by CTUIR Cultural Resources Staff (Section 106 Compliance).
- (5) Subcontracts – will be developed and awarded to the lowest bidder for noxious weed control, fence construction, operated heavy equipment and tree planting.
- (6) In-stream enhancements - large woody debris will be placed and existing stream bank stabilization structures maintained (as needed).
- (7) Fence construction – approximately three to five stream miles of riparian corridor fencing will be constructed in new project areas.
- (8) Vegetation – approximately 1,500 pounds of native grasses will be seeded and 25,000 indigenous trees planted in existing and new enhancement areas.
- (9) Noxious weed treatment – noxious weeds as indicated on Umatilla County's Noxious A Weed List will be controlled in 20 miles of stream corridor.

Objective 2. Collect pre and post-project data to identify habitat limiting factors and to quantify short and long-term effects of habitat enhancements in the Umatilla River Basin.

Products derived from Objective 2:

- (1) Habitat survey data, biological inventory data, photo point data, stream channel transect data, aquatic macroinvertebrate data, stream temperature data and suspended sediment data - information will be collected, compiled and discussed in annual BPA Reports.

Objective 3. Continue watershed planning, scoping and education processes by identifying problems and developing creative solutions to land use problems impacting fisheries habitat in the Umatilla River Basin.

Products derived from Objective 3:

- (1) Enhancement project prioritization schedule – will be developed from completed Umatilla River Basin Watershed Assessment.
- (2) Public tours, workshops, presentations and meetings – local outreach efforts will continue to be conducted.
- (3) Educational materials – hand-outs, brochures, etc. will be produced and provided to the public to promote watershed and habitat education efforts.

f. Methods

- (1) Riparian easements are developed internally by CTUIR Fisheries Staff and Tribal Attorneys. Riparian corridor widths, length of agreement, number of livestock watering gaps and other terms are negotiated with the landowner(s).
- (2) Cost-share funds are generally secured by CTUIR completing grant applications (USFWS, GWEB, etc.) and competing with other grant applicants. Funds from CTUIR, BIA, EPA and Umatilla County have already been obligated.
- (3) COE, ODSL and CTUIR fill and removal permits are applied for and renewed in compliance with Sections 401 and 404 of the Clean Water Act. All in-stream work is implemented during the designated in-stream work window (when salmonids are least likely to be impacted).
- (4) CTUIR's Cultural Resources Staff conduct file and literature searches, pedestrian surveys and/or archeological excavations in proposed habitat enhancement areas to determine if cultural resources potentially eligible for inclusion to the National Register of Historic Places are present on the site. Final reports documenting their findings are prepared and submitted to the BIA Umatilla Agency Real Property Management Office (for implementation efforts on the Reservation) and to the State Historic Preservation Office (for implementation efforts, both on and off the Reservation). All cultural clearances are obtained in compliance with Section 106 of the National Historic Preservation Act.
- (5) Letters are mailed to perspective contractors, requesting participation in pre-bid tours and submission of bids. A subcontract is awarded and notice to proceed issued to the contractor with the lowest bid.
- (6) Project designs are jointly developed by the Project Leader and CTUIR Hydrologist. In-stream placement of large woody debris continues to be a high priority due to low natural wood recruitment and habitat diversity in the upper basin. Hydrological controls (rock vortex weirs, wing deflectors and sediment retention structures) are used sparingly and restricted to stream reaches where benefits (grade control, sediment deposition and increased habitat) are immediate. More costly bio-engineering approaches are reserved for areas that will not recover in a timely or natural manner.
- (7) Both, smooth-wire high tensile fencing and barbed wire fencing are constructed to restrict livestock from riparian corridors. The use of high tensile fencing has proven to be most effective when livestock are distributed over a vast area (open range) and where tree blowdown is frequent. This type of fencing has a breaking strength and stretching point nearly twice that of barbed wire (Reeves, 1988), and the fluidity of the fence allows the shock of impact to spread throughout the entire fence length and prevent wildlife entanglement. Due to extremely low maintenance, high tensile fence is very cost-effective. Barbed wire fencing is useful when livestock pressure is significant. Barbed wire fencing has been reserved for open country (few trees) with large numbers of cattle in confined pastures. The project has constructed approximately 20 miles of fence in the upper basin. In nine years, CTUIR has had to reconstruct only 1,429 yards of fence

- (following the 1996 100 year flood event) due to obtainment of wide corridors extending well into floodplain areas.
- (8) Native grass mixes have been developed by Grassland West Seed Company based on historical vegetation, soil types and project elevation. Grasses are seeded with a harrow or broadcast seeder. Indigenous trees and shrubs are planted as cuttings, bareroot stock or tubelings. Bareroot and tubeling trees are subbasin specific trees produced from seed or cuttings (obtained from proposed project sites) at the CTUIR Native Plant Nursery. Native grasses have been reestablished at a rate of 50% or greater. Trees grown at the nursery have exhibited high survival rates (greater than 70 percent) and alleviated concerns regarding gene pool contamination of existing native plant communities.
 - (9) Umatilla County Level "A" Noxious Weeds growing within project areas are chemically treated three times a year by Umatilla County Weed Control. CTUIR project personnel treat other weeds, competing with native revegetation efforts, by burning and with chemical applications as needed.
 - (10) Photo points are established in project areas. All photos are taken with a 35mm camera and standard 50mm lens. Photos are taken before project implementation and in the spring and fall of each year after project implementation. A photo point binder containing 35mm slides of riparian recovery is maintained at the CTUIR Fisheries Office. Photo points generally indicate an upward trend in vegetative recovery, stream bank stability and cover. All project areas are currently demonstrating early recovery.
 - (11) Aquatic macroinvertebrate surveys are an important tool in describing the condition and relative health of the aquatic ecosystem. As a food source they are essential to the growth and production of fish and, because of their strict habitat requirements are very useful as indicators of changes in aquatic habitat (USDA, Forest Service, 1985). The project utilizes site-specific macroinvertebrate data to assist in assessment and improvement of aquatic habitat and water quality within a given stream reach. Macroinvertebrates are sampled with a Winget-Modified Surber Net in riffles in the Mission Creek and Spring Hollow Creek project areas during early summer and early fall each year. Sampling methodology developed by the U.S. Forest Service – Intermountain Region Wildlife Management is utilized to sample macroinvertebrates. Methods are described in detail in Chapter 5 of the Fisheries Habitat Surveys Handbook (publication #R-4 F5H 2609.23). Macroinvertebrate samples and field support data are sent to Dr. Fred Magnum at the U.S. Forest Service Aquatic Ecosystem Lab in Provo, Utah for identification and analysis. Data analysis indices include: richness, abundance, EPT indices, diversity indices, USFS Biotic Condition Index, modified Hilsenhoff Biotic Index, relative taxon pollution tolerance and voltinism. Data summaries are included in annual reports. Macroinvertebrates surveys have been conducted for the past four years.
 - (12) Summer stream temperatures are monitored with Ryan Tempmentors and Ryan 2000 thermographs at 21 sites. Thermographs collect June through September maximum, minimum and average temperature readings each hour. Temperature data is useful in determining benefits and effects of riparian enhancements. Temperature data collected under this project has also been relied upon to assist in development of DEQ's 303(d) List for the Umatilla Basin and is currently being provided to the Umatilla Basin Total Maximum Daily Load (TMDL) Technical Group to assist in development of rolling 7-day average maximum temperatures.
 - (13) Three Isco Model 2700 Wastewater Samplers are deployed at gage stations to obtain daily estimates of suspended sediments. Samples are collected year-round at six hour intervals to create a composite daily sample. The samples are processed monthly by Umatilla National Forest service Personnel to determine Jackson Turbidity Units, conductivity and total dissolved solids.
 - (14) An updated Umatilla Basin Watershed Assessment is currently being developed by WSU. Habitat limiting factors identified in this document will assist in determining specific FY2000 project locations and necessary enhancements. The watershed assessment will also provide a more cost-effective approach to managing personnel and funding. More detailed information, regarding proposed implementations, will be contained in the FY2000 BPA Statement of Work.
 - (15) Local outreach efforts (scoping meetings, workshops, tours and presentations) will continue to seek public input, address landowner concerns and provide watershed education opportunities.
 - (16) Educational materials, such as hand-outs and pamphlets, will continue to be produced and distributed to the public to promote watershed and habitat restoration and protection efforts.

g. Facilities and equipment

Specialized equipment required to implement specific habitat enhancements are requested under construction contract agreements with subcontractors. A printer was previously purchased to perform duties indicated in the project's statement of work. Pickup trucks to perform field duties and attend meetings external to the office are leased from General Services Administration (GSA) with BPA and BIA funds. Computers and office space are currently funded with CTUIR and BIA funding. The project purchases field equipment, non-capital equipment and office supplies on an annual basis as needed. All major facilities and equipment available under the project currently satisfy project needs.

h. Budget

Personnel * funded under this project include:

Fisheries Program Manager – 1 month
Fisheries Project Leader – 6 months
Fish Habitat Lead Technician – 8 months
Fish Habitat Technician – 12 months
Fisheries Office Manager – 1 month
Fisheries Secretary – 1 month
Hydrologist – 0.5 month
GIS Project Analyst – 1 month
Cultural Technician – 1 month

* Cost-share funds will be provided by CTUIR , EPA and Umatilla County to cover additional personnel services.

Supplies, materials, non-expendable property funded under this project include:

Construction materials – trees, grass seed, fencing and rock**
Field materials – tools, waders, field gear, sampling equipment, etc.
Lab materials – filter paper for sediment samplers
Lab fees – analysis of macroinvertebrate samples
Repairs and maintenance – repair and maintain previously purchased BPA property
Communications – telephone services
Office supplies – paper, pens, etc.
Duplication/printing – photo processing, photo copies, color copies, etc.
Public Education Materials – photo enlargement, lamination, display materials
Non-capital Equipment – thermographs, electrical tools, etc.
Subscriptions – native plant magazines, professional fisheries journals

**Cost-shares funds will be provided by the EPA to cover additional construction materials.

Travel*** expenses funded under this project include:

Vehicles – monthly lease of GSA vehicles
Mileage – fuel expenses
Vehicle Insurance
Per Diem – personnel travel reimbursement
Training – personnel participation at workshops, meetings, etc.

*** Cost-share funds will be provided by the BIA to cover additional travel expenses.

Subcontract work **** funded under this project include:

Operated heavy equipment rental – excavators, bulldozers, etc. to perform enhancements

Fence construction – construction of riparian corridor fencing
Noxious weed control – chemical treatment of noxious weeds in enhancement areas
Tree planting – planting cuttings, bareroot trees and tublings in project areas

**** Cost-share funds will be provided by the BIA, EPA and Umatilla County to cover additional subcontract expenses.

Section 9. Key personnel

Project Leader: R. Todd Shaw

Education: Lake Superior State University
Bachelor of Science Degree, December 1988
Major: Fisheries and Wildlife Management
Minor I: Chemistry
Minor II: Conservation Law Enforcement

Hocking Technical College
Associate of Applied Science Degree, June 1983
Major: Fisheries and Wildlife
Certificate I: Fisheries Management
Certificate II: Nature Interpretation

Current Employer: Confederated Tribes of the Umatilla Indian Reservation (CTUIR)

Current Responsibilities: Administer anadromous fish habitat enhancement project. Develop, negotiate and secure riparian easements. Prepare quarterly and annual reports, work plans, budgets, BPA funding proposals, purchase requisitions, and fence construction, operated equipment, tree planting and weed control subcontracts. Pursue cost-share funds and complete grant applications. Prepare fill and removal permit applications. Summarize pre and post-project monitoring data. Supervise, train and direct habitat technicians, seasonal employees and volunteers in maintaining, monitoring and implementing habitat improvements. Serve as Tribal spokesperson for habitat conservation and restoration issues at internal and interagency meetings. Prepare and review correspondence related to local, Tribal, state and federal environmental regulations. Provide tours and oral presentations to various interest groups to promote habitat protection and restoration. Prepare educational materials and provide outreach efforts to the public, school groups, education service districts, etc. Prepare news articles and releases for Tribal and local news media. Conduct and facilitate scoping meetings with land owners and agencies to identify and address land use practices detrimental to salmonid production. Investigate, review and comment on proposed timber sales, range management plans, environmental assessments and impact statements, Tribal Stream Zone Alteration Permit Applications, and COE and ODSL Joint Permit (404 Fill and Removal) Applications.

Recent Previous Employment:

March 1992 – January 1993, Biological Fisheries Technician, U.S. Fish and Wildlife Service, Contaminants Section – Yankton Field Research Station, Yankton, SD.

May 1990 – December 1991, Experimental Biological Aide, Oregon Department of Fish and Wildlife, Bend and Seaside, OR.

June 1988 – September 1989, Fisheries Aide, Indiana Department of Natural Resources, Avoca, IN.

September 1987 - May 1988, Coldwater Hatchery Internship, Lake Superior State University Aquatics Lab, Sault Sainte Marie, MI.

June 1987 – August 1987, Fisheries Aide, U.S. Forest Service, Tongass National Forest, Hoonah, AK.

April 1983 – June 1983, Coolwater Hatchery Internship, Ohio Division of Wildlife, Hebron State Fish Hatchery, Hebron, OH.

Expertise:

Eleven years of fisheries experience including: propagating saugeye, arctic grayling, Kamloops rainbow trout, and atlantic salmon; stream channel typing and habitat classification; designing and implementing habitat enhancements in anadromous drainages; conducting salmon escapement surveys; conducting biological stream surveys; sampling warmwater fisheries populations in large impoundments; conducting fisheries harvest, mortality and survival studies; assisting with acute toxicity studies to assess fish exposures to trace elements; and performance of current responsibilities as indicated above.

Five Relevant Publications or Job Completions:

- (1) 1993 through 1997 Umatilla River Basin Anadromous Fish Habitat Enhancement Project Annual Reports (published by BPA).
- (2) Planned and directed implementation of stream bank stabilization project on lower Meacham Creek.
- (3) Coordinated planting of over 8,000 native trees in habitat enhancement project areas.
- (4) Awarded 1,997 yard fence construction contract for construction of riparian corridor fencing in the Squaw Creek and upper Umatilla River drainages.
- (5) Provided presentations to fifth and sixth grade students at the Umatilla-Morrow County Education Service District's Watershed Field Day.

Section 10. Information/technology transfer

Project reports are produced quarterly and annually. Project personnel provide oral presentations and field tours throughout the year to demonstrate accomplishments, provide educational opportunities and solicit additional landowner participation. Project personnel also frequently speak at public forums (local workshops, agency meetings, etc.).

All entities involved in stream habitat alterations (project implementors and regulatory agencies) conduct pre and post-project tours bi-annually to make recommendations and assess project successes and failures.

Congratulations!